



Attorney Docket No. 5347-223

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re: Jeffrey A. Kelber et al.

Serial No.: 10/785,615

Filed: February 24, 2004

For: CONDUCTORS CREATED BY METAL DEPOSITION USING A SELECTIVE
PASSIVATION LAYER AND RELATED METHODS

Examiner: Tuan T Dinh

Group Art No.: 2841

Confirmation No.: 2942

April 17, 2006

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

**INFORMATION DISCLOSURE STATEMENT
PURSUANT TO 37 C.F.R. § 1.97(b)**

Sir:

Attached is a list of documents on Form PTO-1449, together with a copy of any listed foreign patent document and/or non-patent literature. A copy of any listed U.S. patent and/or U.S. patent application publication is not provided herewith in accordance with the amendment by the U.S. Patent and Trademark Office to 37 C.F.R. § 1.98(a)(2)(ii) effective October 21, 2004. It is requested that these documents be considered by the Examiner and officially made of record in accordance with the provisions of 37 C.F.R. § 1.56 and Section 609 of the MPEP.

This Information Disclosure Statement is submitted in accordance with 37 C.F.R. § 1.97(b), within three months of the filing date of the above-referenced application or before the mailing of a first Office Action on the merits, whichever event occurs last. Therefore, no fee is believed due. However, the Commissioner is hereby authorized to charge any deficiency or credit any overpayment to Deposit Account No. 50-0220.

Respectfully submitted,

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Susan E. Freedman

Date of Signature: April 17, 2006

Substitute form 1449A/PTO		Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>		Application Number	10/785,615
		Filing Date	02/24/2004
		First Named Inventor	Jeffrey A. Kelber
		Group Art Unit	2841
		Examiner Name	Tuan T. Dinh
		Attorney Docket Number	5347-223
Sheet	1 of 2		



OTHER NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T
	1.	Bertel et al "The Adsorption of Bromine on Pt(111): Observation of an Irreversible Order-Disorder Transition" <u>Surface Science</u> 83:439-452 (1979)	
	2.	Bhaskar et al. "X-ray photoelectron spectroscopy and micro-Raman analysis of conductive RuO ₂ Thin Films" <u>Journal of Applied Physics</u> , 89(5):2987-2992	
	3.	Böttcher et al. "Formation of subsurface oxygen at Ru(0001)" <u>The Journal of Chemical Physics</u> 110(6):3186-3195 (1999)	
	4.	Chan et al. "High-Pressure Oxidation of Ruthenium as Probed by Surface-Enhanced Raman and X-Ray Photoelectron Spectroscopies" <u>Journal of Catalysis</u> 172:336-345 (1997)	
	5.	Chyan et al. "Electrodeposition of Copper Thin Film on Ruthenium A Potential Diffusion Barrier for Cu Interconnects" <u>Journal of the Electrochemical Society</u> 150(5):C347-C350 (2003)	
	6.	Cumpson et al. "Elastic Scattering Corrections in AES and XPS. II. Estimating Attenuation Lengths and Conditions Required for their Valid Use in Overlayer/Substrate Experiments" <u>Surface and Interface Analysis</u> 25:430-446 (1997)	
	7.	DiCenzo et al. "XPS Studies of Adatom-Adatom Interactions: I/Ag(111) and I/Cu(111) <u>Surface Science</u> 121:411-420 (1982)	
	8.	Feibelman "Partial Dissociation of Water on Ru(0001)" <u>Science</u> 295(5552):99-102 (2002)	
	9.	Garwood, Jr. et al. "Superlattices Formed by Interaction of Iodine, Water and Oxygen With the (111) Plane of an Fe-Cr-Ni Alloy fcc Single Crystal: Studies by Leed, Auger and Thermal Desorption Mass Spectroscopy" <u>Surface Science</u> 121:L524-L530 (1982)	
	10.	Grant et al. "A Study of Ru(0001) and Rh(111) Surfaces Using Leed and Auger Electron Spectroscopy" <u>Surface Science</u> 21:76-85 (1970)	
	11.	Hubbard "Electrochemistry at Well-Characterized Surfaces" <u>Chem. Rev</u> 88:633-656 (1988)	
	12.	Hwang et al. "Surfactant-Assisted Metallorganic CVD of (111)-Oriented Copper Films with Excellent Surface Smoothness" <u>Electrochemical and Solid-State Letters</u> 3(3):138-140 (2000)	
	13.	Kibler et al. "Initial stages of Pd deposition on Au(hkl) Part I: Pd on Au(111)" <u>Surface Science</u> 443:19-30 (1999)	
	14.	Kim et al. "Chemical state of ruthenium submonolayers on a Pt(111) electrode" <u>Surface Science</u> 474:L203-L212 (2001)	
	15.	Kiskinova et al. "Adsorption and Decomposition of H ₂ O on a K-Covered Pt(111) Surface" <u>Surface Science</u> , 150:319-338 (1985)	
	16.	Kolb et al. "Scanning Tunneling Microscopy for Metal Deposition Studies" <u>Interface</u> 8(1):26-30 (1999)	
	17.	Kötz et al. "XPS Studies of Oxygen Evolution on Ru and RuO ₂ Anodes" <u>Journal of the Electrochemical Society</u> , 130(4):825-829 (1983)	
	18.	Lin et al. "Combined Ultrahigh Vacuum/Electrochemistry Study of the Adsorption of Lead on Clean and Sulfur-Modified Nickel Surfaces in Aqueous Environments" <u>Langmuir</u> 14:3673-3681 (1998)	
	19.	Liu et al. "The Effects of an Iodine Surface Layer on Ru Reactivity in Air and during Cu Electrodeposition" <u>J. Electrochem. Soc.</u> , 152(2):G115-G121 (2005)	
	20.	Lu et al. "Adlattice Structure and Hydrophobicity of Pt(111) In Aqueous Potassium Iodide Solutions Influence of pH and Electrode Potential" <u>J. Electroanal. Chem.</u> 222:305-320 (1987)	
	21.	Lu et al. "In Situ Scanning Tunneling Microscopy of (Bi)sulfate, Oxygen, and Iodine Adlayers Chemisorbed on a Well-Defined Ru(001) Electrode Prepared in a Non-Ultrahigh-Vacuum Environment" <u>Langmuir</u> , 18:754-762 (2002)	
	22.	Madey et al. "Adsorption of Oxygen and Oxidation of CO on the Ruthenium (001) Surface" <u>Surface Science</u> 48:304-328 (1975)	
	23.	Madhavaram et al. "Oxidation Reactions over RuO ₂ : A Comparative Study of the Reactivity of the (110) Single Crystal and Polycrystalline Surfaces" <u>Journal of Catalysis</u> 202:296-307 (2001)	
	24.	Martinez-Ruiz et al. "Underpotential deposition of Cu on iodine-modified Au(111): an in situ scanning tunneling microscopy study" <u>Surface Science</u> 476:139-151 (2001)	
	25.	Nakamura et al. "Monomer and tetramer water clusters adsorbed on Ru(0001)" <u>Chemical Physics Letters</u> 325:293-298 (2000)	
	26.	Oskam et al. "Electrochemical Deposition of Copper on n-Si/TiN" <u>Journal of the Electrochemical Society</u> 146(4):1436-1441 (1999)	
	27.	Quayum et al. "Mechanism for nucleation and growth of electrochemical palladium deposition on an Au(111) electrode" <u>Journal of Electroanalytical Chemistry</u> 520:126-132 (2002)	
	28.	Reuter et al. "Atomistic description of oxide formation on metal surfaces: the example of ruthenium" <u>Chemical Physics Letters</u> 352:311-317 (2002)	

Examiner Signature	Date Considered
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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	29.	Seshadri et al. "Sulfur Catalyzed Electrochemical Oxidation of Copper: A Combined Ultrahigh Vacuum Electrochemistry Study" <u>Journal of the Electrochemical Society</u> 146(5):1762-1765 (1999)	
	30.	Seshadri et al. "The Promotion of the Anodic Dissolution of Polycrystalline Iron Surfaces by Adsorbed Sulfur: A UHV-Electrochemical Study" <u>Corrosion Science</u> 39(5):987-1000 (1997)	
	31.	Shen et al. "An ESCA study of the interaction of oxygen with the surface of ruthenium" <u>Applied Surface Science</u> 51:47-60 (1991)	
	32.	Sherwood "Curve fitting in surface analysis and the effect of background inclusion in the fitting process" <u>J. Vac. Sci. Technol A</u> 14(3):1424-1432	
	33.	Shi et al. "Reaction between H ₂ O and Cs on the Ru(001) surface" <u>Surface Science</u> 317:45-57 (1994)	
	34.	Shue et al. "In Situ Scanning Tunneling Microscopy of Underpotential Deposition of Copper at Pt(100) Electrodes Coated with an Iodine Monolayer" <u>J. Phys. Chem. B</u> 105:5489-5496 (2001)	
	35.	Smith et al. "Evaluation of precursors for chemical vapor deposition of ruthenium" <u>Thin Solid Films</u> , 376:73-81 (2000)	
	36.	Stampfl et al. "Structure and Stability of a High-Coverage (X) Oxygen Phase on Ru(0001)" <u>Physical Review Letters</u> , 77(16):3371-3374 (1996)	
	37.	Stickney et al. "Electrodeposition of Copper on Platinum (111) Surfaces Pretreated With Iodine" <u>Journal of the Electrochemical Society</u> 131(2):260-267 (1984)	
	38.	Takahashi "Electroplating Copper Onto Resistive Barrier Films" <u>Journal of the Electrochemical Society</u> 147(4):1414-1417 (2000)	
	39.	Tanaka et al. "Kinetics of Oxidization Processes of Ruthenium Particles" <u>J. Am. Ceram. Soc.</u> 81(10):2513-2516 (1998)	
	40.	Tanuma et al. "Calculations of Electron Inelastic Mean Free Paths. V. Data for 14 Organic Compounds over the 50-2000 eV Range" <u>Surface and Interface Analysis</u> 21(3):165-176 (1994)	
	41.	Wang et al. "Seedless Electrodeposition of Cu on Unmodified Tungsten" <u>Electrochemical and Solid-State Letters</u> 5(9):C-82-C84 (2002)	
	42.	Wieckowski et al. "Preparation of Well-Defined Surfaces at Atmospheric Pressure: Studies by Electrochemistry and LEED of Pt(100) Pretreated With Iodine" <u>Inorg. Chem.</u> 23:565-569 (1984)	

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